

GLOSSARY

3D RAM — Special video RAM designed to improve 3D graphics simulation.

32-bit flat memory mode — A protected processing mode used by Windows NT to process programs written in 32-bit code early in the boot process.

A+ Certification — A certification awarded by CompTIA (The Computing Technology Industry Association) that measures a PC technician's knowledge of the skills and behaviors expected of entry-level PC technicians. Many companies require that their service technicians have A+ Certification.

Accelerated graphics port (AGP) — A slot on a system board for a video card that provides transfer of video data from the CPU that is synchronized with the memory bus.

ACPI (Advanced Configuration and Power Interface) — Specification developed by Intel, Microsoft, and Toshiba to control power on notebooks and other devices. Windows 98 supports ACPI.

Active Directory — A Windows 2000 service that allows for a single point of administration for all shared resources on a network, including files, peripheral devices, databases, Web sites, users, and services.

Adapter address — A 6-byte hex hardware address unique to each NIC and assigned by manufacturers. The address is often printed on the adapter. An example is 00 00 0C 08 2F 35. Also called MAC address.

Adapter card — Also called an interface card. A small circuit board inserted in an expansion slot and used to communicate between the system bus and a peripheral device.

Address Resolution Protocol (ARP) — A method used by TCP/IP that dynamically or automatically translates IP addresses into physical network addresses such as Ethernet IDs or Token Ring MAC addresses.

Administrator account — In Windows NT, an account that grants to the administrator(s) rights and permissions to all hardware and software resources, such as the right to add, delete, and change accounts and to change hardware configurations.

ADSL (asymmetric digital subscriber line) — A method of data transmission over phone lines that is digital, allows for a direct connection, and is about 50 times faster than ISDN.

Advanced Options Menu — A Windows 2000 menu that appears when you press F8 when Windows starts. The menu can be used to troubleshoot problems when loading Windows 2000.

Advanced SCSI programming interface (ASPI) — A popular device driver that enables operating systems to communicate with a SCSI host adapter. (The "A" originally stood for Adaptec.)

Advanced Transfer Cache (ATC) — A type of L2 cache contained within the Pentium processor housing that is embedded on the same core processor die as the CPU itself.

Alternate gateway — An alternate router that is used if the default gateway is down. *See* Gateway.

Alternating current (AC) — Current that cycles back and forth rather than traveling in only one direction. Normally between 110 and 115 AC volts are supplied from a standard wall outlet.

Ammeter — A meter that measures electrical current in amps.

Ampere (A) — A unit of measurement for electrical current. One volt across a resistance of one ohm will produce a flow of one amp.

Amplifier repeater — A repeater that amplifies whatever it receives regardless of its source.

Amplifying repeater — A repeater used on a broadband network that amplifies whatever it receives regardless of its source.

Analog-to-digital converter (A/D or ADC) — A component on a sound card that samples and converts analog sound into digital values that can be stored in a file.

ANSI (American National Standards Institute) — A nonprofit organization dedicated to creating trade and communications standards.

answer file — A text file that contains information that Windows 2000 requires in order to do an unattended installation.

Antivirus (AV) software — Utility programs that prevent infection, or scan a system to detect and remove viruses. McAfee Associates VirusScan and Norton AntiVirus are two popular AV packages.

API (application program interface) — A method used by an application program to call another program to perform a utility task.

Application layer — The layer of the OSI model responsible for interfacing with the user or application using the network.

Asynchronous SRAM — Static RAM that does not work in step with the CPU clock and is, therefore, slower than synchronous SRAM.

- AT command set** — A set of commands used by a PC to control a modem. AT is the ATtention command, which alerts a modem to prepare to receive additional commands. For example, ATDT means attention and listen for a dial tone.
- ATAPI (Advanced Technology Attachment Packet Interface)** — An interface standard that is part of the IDE/ATA standards, which allows tape drives and CD-ROM drives to be treated like an IDE hard drive by the OS.
- ATTRIB command** — A DOS command that can display file attributes and even lock files so that they are “read-only” and cannot be modified (for example, ATTRIB +R FILENAME).
- Audio/modem riser (AMR)** — A specification for a small slot on a system board to accommodate an audio or modem riser card. A controller on the system board contains some of the logic for the audio or modem functionality.
- Auto detection** — A feature on newer system BIOS and hard drives that automatically identifies and configures a new hard drive in the CMOS setup.
- AUTOEXEC.BAT** — One startup file on an MS-DOS computer. It tells the computer what commands or programs to execute automatically after bootup.
- Autorange meter** — A multimeter that senses the quantity of input and sets the range accordingly.
- Back end** — In a client/server environment, the application on the server that processes requests for data from the client.
- Back up, Backup** — When used as a verb, to make a duplicate copy of important files or data. When used as a noun, refers to the file created when backing up. Backups can be made by saving a file with a different name or by copying files to a different storage media.
- Backbone** — A network used to link several networks together. For example, several Token Rings and Ethernet LANS may be connected using a single FDDI backbone.
- Backside bus** — The bus between the CPU and the L2 cache inside the CPU housing.
- Backup domain controller (BDC)** — In Windows NT, a computer on a network that holds a read-only copy of the SAM (security accounts manager) database.
- Backward compatible** — Refers to new hardware and software that is able to support older, existing technologies. This is a common choice of hardware and software manufacturers.
- Bandwidth** — The range of frequencies that a communication cable or channel can carry. In general use, the term refers to the volume of data that can travel on a bus or over a cable.
- Bank** — An area on the system board that contains slots for memory modules (typically labeled bank 0, 1, 2, and 3).
- Base memory** — See Conventional memory.
- Baseband** — Relating to a communications system which carries only a single message at a time over wire. Ethernet uses baseband technology. Compare to broadband.
- Basic drive** — In Windows 2000, a drive that uses a partition table at the beginning of the drive to hold information about the drive's primary and extended partitions. Compare to dynamic drive.
- Batch file** — A text file containing a series of DOS instructions to the computer, telling it to perform a specific task (for example, AUTOEXEC.BAT, which contains a series of startup commands).
- Band rate** — A measure of line speed between two devices such as a computer and a printer or a modem. This speed is measured in the number of times a signal changes in one second. See bps.
- Beam detect mirror** — Detects the initial presence of a laser printer's laser beam by reflecting the beam to an optical fiber.
- Binary number system** — The number system used by computers where there are only two numbers, 0 and 1, called binary digits, or bits.
- Binding** — Associating an OSI layer to a layer above it or below it. For example, associating a protocol type such as TCP/IP to a NIC driver.
- BIOS (basic input/output system)** — Firmware that controls much of a computer's input/output functions, such as communication with the floppy drive, RAM chips, and the monitor. Also called ROM BIOS.
- Bit-map file** — A type of graphics file in which the image is written as a series of 0s and 1s. These files have the extension .bmp and can be loaded into paint programs to be edited and printed.
- Block mode** — A method of data transfer between hard drive and memory that allows multiple data transfers on a single software interrupt.
- BNC connector** — A connector used on an Ethernet 10Base2 (Thinnet) network. A BNC connector looks like a TV cable connector.
- Boot loader menu** — A startup menu that gives the user the choice between Windows NT Workstation Version 4.0 and another OS, such as Windows 98.
- Boot partition** — The hard drive partition where the Windows NT OS is stored. The system partition and the boot partition may be different partitions.
- Boot record (of hard drives)** — The first sector of each logical drive in a partition that contains information about the logical drive. If the boot record is in the active partition, then it is used to boot the OS. Also called OS boot record or volume boot record.
- Boot sector virus** — An infectious program that can replace the boot program with a modified, infected version of the boot command utilities, often causing boot and data retrieval problems.

- Bootable disk** — For DOS, a floppy disk that can upload the OS files necessary for computer startup. It must have the two hidden system files IO.SYS and MSDOS.SYS, and also COMMAND.COM.
- Booting** — The process that a computer goes through when it is first turned on to get the computer ready to receive commands.
- Bps (bits per second)** — A measure of data transmission speed. (Example: a common modem speed is 56,000 bps or 56 Kbps.)
- Break code** — A code produced when a key on a computer keyboard is released. *See* Make code.
- Bridge** — A hardware device or box, coupled with software at the data-link layer, used to connect similar networks and network segments. *See* Router.
- Briefcase** — A Windows 9x system folder used to synchronize files between two computers. When files are transferred from one computer to another, Briefcase automatically updates files on the original computer to the most recent version.
- Broadband** — Relating to a communications system such as cable modem or ATM networks that carry multiple messages over wire, each message traveling on its own frequency. Compare to baseband.
- Buck-boost regulator** — A line-interactive UPS that offers good line conditioning and has an automatic voltage regulator that decreases (“bucks”) the voltage during electrical spikes and boosts it during sags.
- Buffer** — A temporary memory area where data is kept before being written to a hard drive or sent to a printer, thus reducing the number of writes to the devices.
- Burst EDO (BEDO)** — A refined version of EDO memory that significantly improved access time over EDO. BEDO is not widely used today because Intel chose not to support it. BEDO memory is stored on 168-pin DIMM modules.
- Burst SRAM** — Memory that is more expensive and slightly faster than pipelined burst SRAM. Data is sent as a two-step process; the data address is sent, and then the data itself is sent without interruption.
- Burst transfer** — A means of sending data across the bus, with one packet immediately following the next, without waiting for clock beats and/or addressing of the information being sent.
- Bus** — Strips of parallel wires or printed circuits used to transmit electronic signals on the system board to other devices. Most Pentium systems use a 32-bit bus.
- Bus enumerator** — A component of Windows 9x Plug and Play that locates all devices on a particular bus and inventories the resource requirements for these devices.
- Bus mouse** — A mouse that plugs into a bus adapter card and has a round, 9-pin mini-DIN connector.
- Bus network architecture** — A network design in which nodes are connected in line with one another, with no centralized point of contact.
- Bus network topology** — A network design in which nodes are connected in line with one another, with no centralized point of contact.
- Bus speed** — The speed or frequency at which the data on the system board is moving.
- Cabinet file** — A file that contains one or more compressed files, and is often used to distribute software on disk. The Extract command is used to extract one or more files from the cabinet file.
- Cable modem** — A method of data transmission over cable TV lines that requires a modem and an Ethernet network interface card to receive the transmission.
- Cache memory** — A kind of fast RAM that is used to speed up memory access because it does not need to be continuously refreshed.
- Call tracking** — A system that tracks the dates, times, and transactions of help-desk or on-site PC support calls, including the problem presented, the issues addressed, who did what, and when and how each call was resolved.
- Capacitor** — An electronic device that can maintain an electrical charge for a period of time and is used to smooth out the flow of electrical current.
- Cards** — Adapter boards or interface cards placed into expansion slots to expand the functions of a computer, allowing it to communicate with external devices such as monitors or speakers.
- Carrier Sense Multiple Access with Collision Detection (CSMA/CD)** — A feature used in Ethernet networks whereby packets are sent after the sending node listens for silence, and are resent if a collision is detected.
- Carrier** — A signal used to activate a phone line to confirm a continuous frequency; used to indicate that two computers are ready to receive or transmit data via modems.
- CCITT (Comité Consultatif Internationale de Télégraphique et Téléphonique)** — An international organization that was responsible for developing standards for international communications. This organization has been incorporated into ITU. *See* ITU.
- CD or CHDIR command** — A DOS command to change directories (for example, CD\WINDOWS changes the directory to the Windows directory, and CD\ returns to the Root directory).
- CD-R (recordable CD)** — A CD drive that can record or write data to a CD. The drive may or may not be multisession, but the data cannot be erased once it is written.
- CD-RW (rewritable CD)** — A CD drive that can record or write data to a CD. The data can be erased and overwritten. The drive may or may not be multisession.
- Chain** — A group of clusters used to hold a single file.
- Checksum** — A method of error checking transmitted data, whereby the digits are added up and their sum compared to an expected sum.
- Child directory** — *See* Subdirectory.

- Child, parent, grandparent backup method** — A plan for backing up and reusing tapes or removable disks by rotating them each week (child), month (parent), and year (grandparent).
- Chip set** — A group of chips on the system board that relieves the CPU of some of the system's processing tasks, providing careful timing of activities and increasing the overall speed and performance of the system.
- CHS (cylinders, heads, sectors) mode** — The traditional method by which BIOS reads from and writes to hard drives by addressing the correct cylinder, head, and sector. Also called normal mode.
- Circuit boards** — Computer components, such as the main system board or an adapter board, that have electronic circuits and chips.
- Clamping voltage** — The maximum voltage allowed through a surge suppressor, such as 175 or 330 volts.
- Classless addresses** — Class C network addresses that a service provider owns and then subleases to small companies.
- clean installation** — A Windows 2000 installation that overwrites all previous installations on the hard drive partition.
- Client** — In a network, a computer that is connected to another computer and uses programs and/or data stored on the other computer.
- Clock speed** — The speed or frequency that determines the speed at which devices on the system bus operate, usually expressed in MHz. Different components on a system board operate at different speeds, which are determined by multiplying or dividing a factor by the clock speed. The clock speed is itself determined by a crystal or oscillator located somewhere on the system board.
- Clone** — Originally, a computer that was compatible with IBM computer hardware and MS-DOS software. Today, the word clone often refers to no-name Intel and Microsoft compatibles.
- Cluster** — One or more sectors that constitute the smallest unit of space on a disk for storing data (also referred to as a file allocation unit). Files are written to a disk as groups of whole clusters.
- Cluster chain** — A series of clusters used to hold a single file.
- CMOS (complementary metal-oxide semiconductor)** — One of two types of technologies used to manufacture microchips (the other type is TTL or transistor-transistor logic chips). CMOS chips require less electricity, hold data longer after the electricity is turned off, are slower, and produce less heat than do TTL chips. The configuration or setup chip is a CMOS chip.
- COAST (cache on a stick)** — Memory modules that hold memory used as a memory cache. *See* Cache memory.
- CODEC (compressor/decompressor)** — Compressing and later decompressing sound, animation, and video files. MPEG is a common example. Also stands for
- coder/decoder when referring to digital-to-analog conversion.
- Cold Boot** — *See* Hard boot.
- Collision** — In an Ethernet network, a collision occurs when transmitted packets of data are sent at the same time and collide. Ethernet will first listen for silence before it transmits, and it will stop and resend if a collision occurs.
- Color depth** — The number of possible colors used by a monitor. Determines the number of bits used to compose one pixel. One of two characteristics (the other is resolution) that determines the amount of data sent to the video card to build one screen.
- Color space conversion** — Converting images to RGB values before they are displayed. Processing is faster if the video card does the conversion instead of the CPU.
- Combo card** — An Ethernet card that has more than one port to accommodate different cabling media.
- Comment lines** — Documentation lines that are ignored by a program. A REM in front of a line will comment out an AUTOEXEC command. A semicolon will turn an .ini file line into a comment.
- Common access method (CAM)** — A standard adapter driver used by SCSI.
- Communication and networking riser (CNR)** — A specification for a small expansion slot on a system board that accommodates a small audio, modem, or network riser card. Part of the logic for the card is contained in a controller on the system board.
- Compressed drive** — A drive whose format has been reorganized in order to store more data. A compressed drive is really not a drive at all; it's actually a type of file, typically with a host drive called H.
- Computing Technology Industry Association (CompTIA)** — A membership trade association that sponsors A+ Certification, a valuable certification for PC technicians.
- Configuration data** — Also called setup information. Information about the computer's hardware, such as what type of hard drive or floppy drive is present, along with other detailed settings.
- Configuration manager** — A component of Windows 9x Plug and Play that controls the configuration process of all devices and communicates these configurations to the devices.
- Configuration parameter** — In Windows NT, another name for the value names and values of the Registry; information in the Windows NT Registry.
- Connection protocol** — In networking, confirming that a good connection is made before transmitting data to the other end. To accomplish this, most network applications use TCP rather than UDP.

- Connectionless protocol** — When UDP is used and a connection is not required before sending a packet. Consequently, there is no guarantee that the packet will arrive at its destination. An example of a UDP transmission is a broadcast to all nodes on a network.
- console** — An administrative tool contains two or more individual administrative tools. For example, Recovery Console contains a set of commands designed to manage a failed Windows 2000 boot, and Computer Management is a console that contains several tools to monitor and manage hardware and software.
- Constant angular velocity (CAV)** — A technology used by hard drives and newer CD-ROM drives whereby the disc rotates at a constant speed.
- Constant linear velocity (CLV)** — A CD-ROM format in which the spacing of data is consistent on the CD, but the speed of the disc varies depending on whether the data is reading near the center or the edge of the disc.
- Contention-based system** — A system in which each computer contends for the opportunity to transmit on the network. If there is a collision, a computer waits a random amount of time and resends.
- Continuity** — A continuous, unbroken path for the flow of electricity. A “continuity test” can determine whether or not internal wiring is still intact.
- Control blade** — A laser printer component that prevents too much toner from sticking to the cylinder surface.
- Controlled-access unit (CAU)** — A centralized hub on a Token Ring network. *See* Multistation access unit.
- Conventional memory** — Memory addresses between 0 and 640K. Also called base memory.
- Cooperative multitasking** — A type of pseudomultitasking whereby the CPU switches back and forth between programs loaded at the same time. One program sits in the background waiting for the other to relinquish control. Also called task switching.
- Coprocessor** — A chip or portion of the CPU that helps the microprocessor perform calculations and speeds up computations and data manipulations dramatically.
- COPY command** — A command that copies files from one location to another (for example, COPY FILE.EXT A: is used to copy the file named FILE.EXT to the floppy disk in drive A).
- Copyright** — An individual’s right to copy his/her own work. No one else, other than the copyright owner, is legally allowed to do so without permission.
- Corrupted files** — Data and program files that are damaged for any of a variety of reasons, ranging from power spikes to user error.
- CPU (central processing unit)** — Also called a microprocessor. The heart and brain of the computer, which receives data input, processes information, and executes instructions.
- Cross-linked clusters** — Errors caused when files appear to share the same disk space, according to the file allocation table.
- Crosstalk** — The interference that one wire, in a twisted pair, may produce in the other.
- CVF (compressed volume file)** — The file on the host drive of a compressed drive that holds all compressed data.
- DAC (digital-to-analog converter)** — A component that converts digital data back into analog signals just before output from the computer. For example, DAC technology is used to convert digital sound to analog sound just before playback to the speakers.
- Data cartridge** — A type of tape medium typically used for backups. Full-sized data cartridges are $4 \times 6 \times \frac{1}{8}$ inches in size. A minicartridge is only $3\frac{3}{4} \times 2\frac{1}{2} \times \frac{1}{8}$ inches.
- Data communications equipment (DCE)** — The hardware, usually a dial-up modem, that provides the connection between a data terminal and a communications line.
- Data compression** — Reducing the size of files by various techniques such as using a shortcut code to represent repeated data.
- Data line protectors** — Surge protectors designed to work with the telephone line to a modem.
- Data path** — The number of bits of data transmitted simultaneously on a bus. The size of a bus, such as a 32-bit-wide data path in a PCI bus.
- Data terminal equipment (DTE)** — This term refers to both the computer and a remote terminal or other computer to which it is attached.
- Data-link layer** — The OSI layer that assembles data into packets, addresses data, and manages the flow of transmission between devices.
- Datagrams** — Packets of data that travel between networks from a sender to a receiver. A datagram typically includes an IP header, address information, a checksum, and data.
- DEBUG utility** — A DOS utility that shows exactly what is written to a file or memory, using the hexadecimal numbering system to display memory addresses and data.
- De facto standard** — A standard that does not have an official backing, but is considered a standard because of widespread use and acceptance by the industry.
- Default directory** — The directory that DOS automatically uses to save and retrieve files.
- Default drive** — The drive that DOS automatically uses to save and retrieve files.
- Default gateway** — The main gateway or unit that will send or receive packets addressed to other networks.
- Default printer** — The printer that Windows software will use unless the user specifies another printer.
- Defragment** — To “optimize” or rewrite a file to a disk in one contiguous chain of clusters, thus speeding up data retrieval.

- DEL command** — A command that deletes files (for example, DEL A:FILE.EXT deletes the file named FILE.EXT from drive A).
- DELTREE command** — A command used to delete a directory, all its subdirectories, and all files within it (for example, DELTREE DIRNAME deletes the directory named DIRNAME and everything in it).
- Demodulation** — When digital data that has been converted to analog data is converted back to digital data. *See* Modulation.
- Desktop** — The initial screen that is displayed when an OS that has a GUI interface is loaded.
- Device driver** — A small program stored on the hard drive that tells the computer how to communicate with an input/output device such as a printer or modem.
- Diagnostic cards** — Adapter cards designed to discover and report computer errors and conflicts at POST time (before the computer boots up), often by displaying a number on the card.
- Diagnostic software** — Utility programs that help troubleshoot computer systems. Some DOS diagnostic utilities are CHKDSK and SCANDISK. PC-Technician is an example of a third-party diagnostic program.
- Dial-Up Networking (DUN)** — A Windows application that allows a PC to remotely connect to a network through a phone line. A Dial-Up Network icon can be found under My Computer.
- Differential backup** — Backs up only files that have changed or have been created since the last full backup. When recovering data, only two backups are needed: the full backup and the last differential backup.
- Digital diagnostic disk** — A floppy disk that has data written on it that is precisely aligned, which is used to test the alignment of a floppy disk drive.
- Digital signal** — A signal that has only a finite number of values in the range of possible values. An example is the transmission of data over a serial cable as bits, where there are only two values: 0 and 1.
- Digital subscriber line (DSL)** — A type of technology that is used by digital telephone lines that direct connect rather than dial-up.
- Digital video disc (DVD)** — A faster, larger CD-ROM format that can read older CDs, store over 8 gigabytes of data, and hold full-length motion picture videos.
- DIMM (dual inline memory module)** — A miniature circuit board used in newer computers to hold memory. DIMMs can hold 16, 32, 64, or 128 MB of RAM on a single module.
- Diode** — An electronic device that allows electricity to flow in only one direction. Used in a rectifier circuit.
- DIP (dual in-line package) switch** — A switch on a circuit board or other device that can be set on or off to hold configuration or setup information.
- Direct Rambus DRAM** — A memory technology by Rambus and Intel that uses a narrow, very fast network-type memory bus. Memory is stored on a RIMM module. Also called RDRAM or Direct RDRAM.
- Direct current (DC)** — Current that travels in only one direction (the type of electricity provided by batteries). Computer power supplies transform AC current to low DC current.
- Directory** — An OS table that contains file information such as name, size, time and date of last modification, and the cluster number of the file's beginning location.
- Discrete L2 cache** — A type of L2 cache contained within the Pentium processor housing, but on a different die, with a cache bus between the processor and the cache.
- Disk Editor by Norton** — A powerful tool for editing any part of a disk, including the partition table, directory entries, DOS boot record, and FAT.
- Disk cache** — A method whereby recently retrieved data and adjacent data are read into memory in advance, anticipating the next CPU request.
- Disk cloning** — Making an exact image of a hard drive including partition information, boot sectors, operating system installation and applications software to replicate the hard drive on another system or recover from a hard drive crash. Also called disk imaging.
- Disk compression** — Compressing data on a hard drive to allow more data to be written to the drive.
- Disk duplexing** — An improvement of disk mirroring, whereby redundant data is written to two or more drives, and each hard drive has its own adapter card. This provides greater protection than disk mirroring.
- Disk imaging** — *See* disk cloning
- Disk mirroring** — A strategy whereby the same data is written to two hard drives in a computer, to safeguard against hard drive failure. Disk mirroring uses only a single adapter for two drives.
- Disk striping** — Treating multiple hard drives as a single volume. Data is written across the multiple drives in small segments, in order to increase performance and logical disk volume, and, when parity is also used, to provide fault tolerance. RAID 5 is disk striping with an additional drive for parity.
- Disk thrashing** — A condition that results when the hard drive is excessively used for virtual memory because RAM is full. It dramatically slows down processing and can cause premature hard drive failure.
- DISKCOPY command** — A command that copies the entire contents of one disk to another disk of the same type, while formatting the destination disk so that the two will be identical (for example, DISKCOPY A:A: uses drive A to duplicate a disk).
- Display adapter** — *See* Video controller card.

Display power management signaling (DPMS) —

Energy Star standard specifications that allow for the video card and monitor to go into sleep mode simultaneously. See Energy Star systems.

DLL (dynamic-link library) — A file with a .dll file extension that contains a library of programming routines used by programs to perform common tasks.

DMA (direct memory access) controller chip — A chip that resides on the system board and provides channels that a device may use to send data directly to memory, bypassing the CPU.

Docking station — A device designed to connect to a portable, or notebook, computer in order to make it easy to connect the notebook to peripheral devices.

DOCSIS (Data Over Cable Service Interface Specifications) — The communications standard used by cable modems.

Documentation — Manuals, tutorials, and Help files that provide information that a user needs in order to use a computer system or software application.

Domain — In Windows NT, a logical group of networked computers, such as those on a college campus, that share a centralized directory database of user account information and security for the entire domain.

Domain name — A unique, text-based name that identifies an IP (Internet address). Typically, domain names in the United States end in .edu, .gov, .com, .org, or .net. Domain names also include a country code, such as .uk for the United Kingdom.

Domain Name System or Domain Name Service (DNS) — A database on a top-level domain name server that keeps track of assigned domain names and their corresponding IP addresses.

Dot pitch — The distance between the dots that the electronic beam hits on a monitor screen.

Double conversion — The process by which the inline UPS converts the AC power to battery power in DC form and then back to AC power.

Double-data rate SDRAM (DDR SDRAM or SDRAM II) — A type of memory technology used on DIMMs that runs at twice the speed of the system clock.

Doze time — The time before an Energy Star or “Green” system will reduce 80% of its activity.

DriveSpace — A utility that compresses files so that they take up less space on a disk drive, creating a single large file on the disk to hold all the compressed files.

Drop height — The height from which a manufacturer states that its drive can be dropped without making the drive unusable.

Dual boot — The ability to boot using either of two different OSs, such as Windows NT and Windows 98. Note that programs cannot be easily shared between Windows NT and the other OS.

Dual ported — When the video chip set (input) and the RAM DAC (output) can access video memory at the same time. A special kind of video RAM is required.

Dual voltage CPU — A CPU that requires two different voltages, one for internal processing and the other for I/O processing.

Dynamic drive — In Windows 2000, a hard drive that uses a 1-MB database written at the end of the drive to hold information about volumes on the drive and RAID setup information.

Dynamic Host Configuration Protocol (DHCP) — The protocol of a server that manages dynamically assigned IP addresses. DHCP is supported by both Windows 9x and Windows NT, and Windows 2000.

Dynamic IP address — An assigned IP address that is used for the current session only. When the session is terminated, the IP address is returned to the list of available addresses.

Dynamic RAM (DRAM) — The most commonly used type of system memory, with access speeds ranging from 70 to 50 nanoseconds. It requires refreshing every few milliseconds.

Dynamic routing — Routing tables that are automatically updated as new information about routes becomes known and is shared by one router with another. Compare to Static routing.

Dynamic VxD — A VxD that is loaded and unloaded from memory as needed.

ECC (error checking and correction) — A chip set feature on a system board that checks the integrity of data stored on DIMMs and can correct single-bit errors in a byte. More advanced ECC schemas can detect, but not correct, double-bit errors in a byte.

ECHS (extended CHS) mode — A mode of addressing information on a hard drive by translating cylinder, head, and sector information in order to break the 528 MB hard drive barrier. Another name for large mode.

ECP (extended capabilities port) — A bidirectional parallel port mode that uses a DMA channel to speed up data flow.

EDO (extended data output) memory — A type of RAM that may be 10–20% faster than conventional RAM because it eliminates the delay before it issues the next memory address.

EEPROM (electrically erasable programmable ROM) chip — A type of chip in which higher voltage may be applied to one of the pins to erase its previous memory before a new instruction set is electronically written.

EISA (extended industry standard architecture) bus — A 32-bit bus that can transfer 4 bytes at a time at a speed of about 20 MHz.

Electrostatic discharge (ESD) — Another name for static electricity, which can damage chips and destroy system boards, even though it might not be felt or seen with the naked eye.

- Embedded SCSI devices** — A SCSI device designed to be a stand-alone SCSI device with some of the host adapter logic built in.
- Emergency Repair Process** — A Windows 2000 process that restores the OS to its state at the completion of a successful installation.
- Emergency startup disk (ESD)** — A Windows 9x system disk that also contains some Windows 9x diagnostic and utility files. The ESD serves Windows 9x as a rescue disk. *Also see* Rescue disk.
- EMI (electromagnetic interference)** — A magnetic field produced as a side effect from the flow of electricity. EMI can cause corrupted data in data lines that are not properly shielded.
- EMM386.EXE** — A DOS utility that provides both emulated expanded memory (EMS) and upper memory blocks (UMBs).
- Encrypting virus** — A type of virus that transforms itself into a nonreplicating program in order to avoid detection. It transforms itself back into a replicating program in order to spread.
- Energy Star systems** — “Green” systems that satisfy the EPA requirements to decrease the overall consumption of electricity. *See* Green standards.
- Enhanced BIOS** — A newer BIOS that has been written to accommodate larger-capacity gigabyte drives.
- Enhanced IDE technology** — A newer drive standard that allows systems to recognize drives larger than 504 MB/528 MB and to handle up to four devices on the same controller.
- Enhanced metafile format (EMF)** — A format used to print a document that contains embedded print commands. When printing in Windows, EMF information is generated by the GDI portion of the Windows kernel.
- Environment** — As related to OSs, the overall support that an OS provides to applications software.
- Environment subsystems** — In Windows NT, a user-mode process in which a subsystem runs an application in its own private memory address space as a virtual machine. (Compare to integral subsystems.)
- EPP (enhanced parallel port)** — A parallel port that allows data to flow in both directions (bidirectional port) and is faster than original parallel ports on PCs that only allowed communication in one direction.
- EPROM (erasable programmable ROM) chip** — A type of chip with a special window that allows the current memory contents to be erased with special ultraviolet light so that the chip can be reprogrammed. Many BIOS chips are EPROMs.
- ERASE command** — Another name for the DEL command.
- Error correction** — The ability of some modems to identify transmission errors and then automatically request another transmission.
- Escalating** — The process by which a technician passes a customer's problem to higher organizational levels, if he or she cannot address the problem.
- ESCD (extended system configuration data)** — A list written to the BIOS chip of what you have done manually to the system configuration that Plug and Play does not do on its own.
- ESD (electrostatic discharge)** — *See* Electrostatic discharge.
- Ethernet** — The most popular network topology used today. It uses Carrier Sense Multiple Access with Collision Detection (CSMA/CD) and can be physically configured as a bus or star network.
- Event Viewer** — In Windows NT, a utility that tracks and logs events as they are performed by the applications, processes, or user actions. Accessed by clicking Start, Programs, Administrative Tools, and then selecting Event Viewer.
- Executive services** — In Windows NT, a subsystem running in kernel mode that interfaces between the user mode and HAL.
- Expanded memory (EMS)** — Memory outside of the conventional 640K and the extended 1024K range that is accessed in 16K segments, or pages, by way of a window to upper memory.
- Expansion bus** — A bus that does not run synchronized with the system clock.
- Expansion card** — A circuit board inserted into a slot on the system board to enhance the capability of the computer.
- Expansion slot** — A narrow slot on the system board where an expansion card can be inserted. Expansion slots connect to a bus on the system board.
- Expert systems** — Computerized software that uses a database of known facts and rules to simulate a human expert's reasoning and decision-making processes.
- Extended memory** — Memory above the initial 1024 KB, or 1 MB, area.
- External cache** — Static cache memory, stored on the system board or inside CPU housing, that is not part of the CPU (also called level 2 or L2 cache).
- Fatal system error** — An error that prevents Windows NT from loading. An example is a damaged Registry.
- Fault tolerance** — The degree to which a system can tolerate failures. Adding redundant components, such as disk mirroring or disk duplexing, is a way to build in fault tolerance.
- FDDI (Fiber Distributed Data Interface)** — Pronounced “fiddy.” A ring-based network, similar to Token Ring, that does not require a centralized hub. FDDI often uses fiber-optic cabling.
- Ferroresonant regulator** — A UPS device that contains a magnetic coil that can retain a power charge that can be used during a brownout to raise the voltage at switching time.

Field replaceable unit — A component in a computer or device that can be replaced with a new component without sending the computer or device back to the manufacturer. Example: a DIMM memory module on a system board.

File allocation table (FAT) — A table on a disk that tracks the clusters used to contain a file.

File allocation units — *See* Cluster.

File extension — A three-character portion of the name of a file that is used to identify the file type. The file extension follows the filename under DOS naming conventions.

File system — The overall structure that an OS uses to name, store, and organize files on a disk. Examples of file systems are FAT16, FAT32, and NTFS.

File virus — A virus that inserts virus code into an executable program and can spread whenever that program is accessed.

File — A collection of related records or lines that can be written to disk and assigned a name (for example, a simple letter or a payroll file containing data about employees).

Filename — The first part of the name assigned to a file. In DOS, the filename can be no more than 8 characters long and is followed by the file extension.

Fire Wire — An expansion bus that can also be configured to work as a local bus. It is expected to replace the SCSI bus, providing an easy method to install and configure fast I/O devices. Also called IEEE 1394.

Firmware — Software that is permanently stored in a chip.

Flash ROM — ROM that can be reprogrammed or changed without replacing chips.

Flash memory — A type of RAM that can electronically hold memory even when the power is off.

Flat panel monitor — A desktop monitor that uses an LCD panel.

Flow control — When using modems, a method of controlling the flow of data from a sending PC by having the receiving PC send a message to the sending device to stop or start data flow. Xon/Xoff is an example of a flow control protocol.

FM (frequency modulation) method — A method of synthesizing sound by making a mathematical approximation of the musical sound wave. MIDI may use FM synthesis or wavetable synthesis.

Folder — A Windows directory for a collection of related files (for instance, a person may find it convenient to create a Mydata directory, or folder, in which to store personal files). For example, ATDT means attention and listen for a dial tone.

Formatting (a floppy disk) — To prepare a new floppy disk for use by placing tracks or cylinders on its surface to store information (for example, FORMAT A:). Old disks can be reformatted, but all data on them will be lost.

MPM (fast page mode) memory — An earlier memory mode used before the introduction of EDO memory.

Fragmentation — The distribution of data files, such that they are stored in noncontiguous clusters.

Fragmented file — A file that has been written to different portions of the disk so that it is not in contiguous clusters.

Frame — A small, standardized packet of data that also includes header and trailer information as well as error-checking codes. *See also* Packets.

Frame — The header or trailer information added to data to encapsulate it before it is sent over a network.

Front end — In a client/server environment, the application on the client that makes use of data stored on the server.

Frontside bus — The bus between the CPU and the memory outside the CPU housing.

FTP (File Transfer Protocol) — An Internet standard that provides for the transfer of files from one computer to another. FTP can be used at a command prompt, or with a GUI interface, which is available with FTP software or with a Web browser. When using a Web browser, enter the command “ftp” in the browser URL line instead of the usual “http://” used to locate a Web site.

FTP server or FTP site — A computer that stores files that can be downloaded by FTP.

Full backup — A complete backup, whereby all of the files on the hard drive are backed up each time the backup procedure is performed. It is the safest backup method, but it takes the most time.

Full-duplex — Communication that happens in two directions at the same time.

G.Lite — A communications standard sponsored by ITU that is used by ADSL.

Gateway — A device or process that connects networks with different protocols. *See* Bridge and Router.

General Protection Fault (GPF) error — A Windows error that occurs when a program attempts to access a memory address that is not available or is no longer assigned to it.

Genlock — A standard for video-capturing cards that refers to the ability of the card to capture a single unique frame of video, rather than “sampling” pieces of adjoining frames.

Graphics accelerator — A type of video card that has an on-board processor that can substantially increase speed and boost graphical and video performance.

Green Standards — Standards that mean that a computer or device can go into sleep or doze mode when not in use, thus saving energy and helping the environment.

Ground bracelet — An antistatic wrist strap used to dissipate static electricity. Typically grounded by attaching an alligator clip to the computer chassis or to a nearby ground mat.

Ground mat — An antistatic mat designed for electronic workbenches to dissipate static electricity. It often uses a wire attached to the ground connection in an electrical outlet.

- Group files** — Windows 3.x files with the .grp file extension that contain information about a program group of Program Manager.
- Guard tone** — A tone that an answering modem sends when it first answers the phone, to tell the calling modem that a modem is on the other end of the line.
- GUI (graphical user interface)** — A user interface, such as the Windows interface, that uses graphics or icons on the screen for running programs and entering information.
- Half-duplex** — Communication between two devices whereby transmission takes place in only one direction at a time.
- Half-life** — The time it takes for a medium storing data to weaken to half of its strength. Magnetic media, including traditional hard drives and floppy disks, have a half-life of five to seven years.
- Handshaking** — When two modems begin to communicate, the initial agreement made as to how to send and receive data. It often occurs when you hear the modem making noises as the dial-up is completed.
- Hard boot** — Restart the computer by turning off the power or by pressing the Reset button. Also called cold boot.
- Hard copy** — Output from a printer to paper.
- Hard drive** — The main secondary storage device of a PC, a sealed case that contains magnetic coated platters that rotate at high speed.
- Hard drive controller** — A set of microchips with programs that control a hard drive. Most hard drive controllers today are located inside the hard drive housing.
- Hard drive standby time** — The amount of time before a hard drive will shut down to conserve energy.
- Hard-disk loading** — The illegal practice of installing unauthorized software on computers for sale. Hard-disk loading can typically be identified by the absence of original disks in the original system's shipment.
- Hardware** — The physical components that constitute the computer system, such as the monitor, the keyboard, the system board, and the printer.
- Hardware abstraction layer (HAL)** — The low-level part of Windows NT, written specifically for each CPU technology, so that only the HAL must change when platform components change.
- Hardware cache** — A disk cache that is contained in RAM chips built right on the disk controller.
- Hardware compatibility list (HCL)** — The list of all computers and peripheral devices that have been tested and are officially supported by Windows NT (See www.microsoft.com/hwtest).
- Hardware interrupt** — An event caused by a hardware device signaling the CPU that it requires service.
- Hardware profiles** — In Windows NT, configuration information about memory, CPU, and OS, for a PC. A PC may have more than one profile. For example, a docking station PC may have two profiles, one with and one without the notebook PC docked.
- Hardware tree** — A database built each time Windows 9x starts up that contains a list of installed components and the resources they use.
- Head** — The top or bottom surface of one platter on a hard drive. Each platter has two heads.
- Header** — Information sent ahead of data being transferred over a network to identify it to receiving protocols. An IP header consists of items such as header and datagram length, flags, checksum, addresses, and so on.
- Heap** — A memory block set aside for a program's data. If the heap fills up, an "Out of memory" error might occur, even if there is plenty of regular RAM left, especially in 16-bit applications.
- Heat sink** — A piece of metal, with cooling fins, that can be attached to or mounted on an integrated chip (such as the CPU) to dissipate heat.
- Hertz (Hz)** — Unit of measurement for frequency, calculated in terms of vibrations, or cycles, per second. For example, a Pentium CPU may have a speed of 233 MHz (megahertz). For 16-bit stereo sound, 44,100 Hz is used.
- Hibernation** — A power-saving notebook feature. When a computer hibernates, it stores whatever is currently in memory and then shuts down. When it returns from hibernating, it restores everything back to the way it was before the shutdown.
- Hidden file** — A file that is not displayed in a directory list. To hide or display a file is one of the file's attributes kept by the OS.
- High memory area (HMA)** — The first 64K of extended memory. The method of storing part of DOS in the high memory area is called loading DOS high.
- High-level format** — Format performed by the OS that writes a file system to a logical drive. For DOS and Windows 9x, the command used is FORMAT, which writes a FAT and a directory to the drive. Also called OS format.
- HIMEM.SYS** — A device driver that manages memory above 640K. It is often executed by the line DEVICE = C:\DOS\HIMEM.SYS in a CONFIG.SYS file.
- Hive** — A physical segment of the Windows NT Registry that is stored in a file.
- Holographic image** — A three-dimensional image (created by holography) that is made up of a light interference pattern preserved in a medium such as photographic film and that changes when the angle of view changes. Because making unofficial copies of holographic images is extremely difficult, they are often used to tag products, such as software packages, as original, making it difficult to distribute illegal copies.
- Hop count** — The number of routers a packet must pass through in a network in order to reach its destination.

- Host adapter** — The circuit board that controls a SCSI bus that supports as many as eight or 16 separate devices, one of which is a host adapter that controls communication with the PC.
- Host drive** — Typically drive H on a compressed drive. *See* Compressed drive.
- Hot swapping** — The ability of a computer to use a device, such as a PC Card on a notebook, that is inserted while the computer is running without the computer needing to be rebooted.
- Hot-pluggable** — A characteristic of 1394 devices that let you plug in the device without rebooting your PC and remove the device without receiving an error message.
- HTML (Hypertext Markup Language)** — The language used to create hypertext documents commonly used on web sites. HTML documents have an .html file extension.
- HTTP (Hypertext Transfer Protocol)** — The common transfer protocol used by Internet browsers on the World Wide Web.
- Hub** — A network device or box that provides a central location to connect cables.
- Hypertext** — Text that contains links to remote points in the document or to other files, documents, or graphics. Hypertext is created using HTML and is commonly distributed from Web sites.
- I/O addresses** — Numbers that are used by devices and the CPU to manage communication between them.
- I/O card** — A card that often contains serial, parallel, and game ports on the same adapter board, providing input/output interface with the CPU.
- IBM-compatible** — A computer that uses an Intel (or compatible) processor and can run DOS and Windows.
- IEEE 1284** — A standard for parallel ports developed by the Institute for Electrical and Electronics Engineers and supported by many hardware manufacturers.
- IEEE 1394** — *See* Fire Wire.
- In-band signaling** — In modem communication, the name of the signaling used by software flow control, which pauses transmission by sending a special control character in the same channel (or band) that data is sent in.
- Incremental backup** — A time-saving backup method that only backs up files changed or newly created since the last full or incremental backup. Multiple incremental backups might be required when recovering lost data.
- Infestation** — Any unwanted program that is transmitted to a computer without the user's knowledge and that is designed to do varying degrees of damage to data and software. There are a number of different types of infestations, including viruses, Trojan horses, worms, and time bombs, among others.
- Initialization files** — Configuration information files for Windows. Win.ini and System.ini are the two most important Windows 3.x initialization files.
- Inline UPS** — A UPS that continually provides power through a battery-powered circuit, and, because it requires no switching, ensures continuous power to the user.
- Instruction set** — The set of instructions, on the CPU chip, that the computer can perform directly (such as ADD and MOVE).
- Integral subsystems** — In Windows NT, processes used to provide services to the rest of the system and the applications the system supports. (Compare to environment subsystems.)
- Integrated Device Electronics (IDE)** — A hard drive whose disk controller is integrated into the drive, eliminating the need for a controller cable and thus increasing speed, as well as reducing price.
- Intelligent hubs** — Network hubs that can be remotely controlled at a console, using network software. These hubs can monitor a network and report errors or problems.
- Intelligent UPS** — A UPS connected to a computer by way of a serial cable so that software on the computer can monitor and control the UPS.
- Interlace** — A display in which the electronic beam of a monitor draws every other line with each pass, which lessens the overall effect of a lower refresh rate.
- Interleave** — To write data in nonconsecutive sectors around a track, so that time is not wasted waiting for the disk to make a full revolution before the next sector is read.
- Internal cache** — Memory cache that is faster than external cache, and is contained inside 80486 and Pentium chips (also referred to as primary, Level 1, or L1 cache).
- Internal DOS commands** — DOS commands whose coding is contained within COMMAND.COM and are, therefore, automatically loaded into memory when COMMAND.COM is loaded.
- Internet** — The worldwide collection of over a million hosts that can communicate with each other using TCP/IP. The lowercase internet simply means multiple networks connected together.
- Internet Control Message Protocol (ICMP)** — Part of the IP layer that is used to transmit error messages and other control messages to hosts and routers.
- Internet Network Information Center (InterNIC)** — The central group that assigns and keeps track of all Internet IP addresses on the organizational level.
- Internet Printing Protocol (IPP)** — A protocol used to send print jobs across the Internet. A printer is addressed by its URL (uniform resource locator)—for example, www.ourdomain.com/printer4.
- Internet service provider (ISP)** — A commercial group that provides a user with Internet access for a monthly fee. AOL, Prodigy, GTE, and CompuServe are four large ISPs.
- Internetwork** — Two or more networks connected together, such as a LAN and a WAN joined together.
- Interpolative scaling** — A method used to fill in the gaps in an image to produce a more realistic-looking display when a small video window is enlarged to full-screen size.

Interrupt handler — A program (either BIOS or a device driver), that is used by the CPU to process a hardware interrupt.

Interrupt vector table — A table that stores the memory addresses assigned to interrupt handlers. Also called a vector table.

Intranet — A private internet used by a large company.

IP (Internet Protocol) address — A 32-bit “dotted-decimal” address consisting of four numbers separated by periods, used to uniquely identify a device on a network that uses TCP/IP protocols. The first numbers identify the network; the last numbers identify a host. An example of an IP address is 206.96.103.114.

IPX/SPX — A protocol developed and used by Novell NetWare for LANs. The IPX portion of the protocol works at the network layer, which is responsible for routing, and the SPX portion of the protocol manages error checking at the transport layer.

IRQ (interrupt request number) — A line on a bus that is assigned to a device and is used to signal the CPU for servicing. These lines are assigned a reference number (for example, the normal IRQ for a printer is IRQ 7).

ISA bus — An 8-bit industry standard architecture bus used on the original 8088 PC. Sixteen-bit ISA buses were designed for the 286 AT, and are still used in Pentiums for devices such as modems.

ISDN (Integrated Services Digital Network) — A communications standard that can carry digital data simultaneously over two channels on a single pair of wires, at about five times the speed of regular phone lines.

Isochronous data transfer — A method used by IEEE 1394 to transfer data continuously without breaks.

ITU (International Telecommunications Union) — The international organization responsible for developing international standards of communication. Formally CCITT.

Joule — A measure of energy equal to the work done when a current of one ampere is passed through a resistance of one ohm for one second.

JPEG (Joint Photographic Experts Group) — A “lossy” graphical compression scheme that allows the user to control the amount of data that is averaged and sacrificed as file size is reduced. It is a common Internet file format. *See* Lossy compression.

Jumpers — Two wires that stick up side by side on the system board that are used to hold configuration information. The jumper is considered closed if a cover is over the wires, and open if the cover is missing.

Kernel — Core portion of an operating system that loads applications and manages files, memory, and other resources.

Kernel mode — A Windows NT “privileged” processing mode that has access to hardware components.

Keyboard — A common input device through which data and instructions may be typed into computer memory.

Keys — In Windows 9x, section names of the Windows 9x Registry.

Land — Microscopic flat areas on the surface of a CD or DVD that separate pits. Lands and pits are used to represent data on the disc.

Laptop computer — *See* Notebook.

Large mode — A format that supports hard drives that range from 504 MB to 1 GB, mapping the data to conform to the 504-MB barrier before the address information is passed to the operating system.

Legacy — An older device or adapter card that does not support Plug and Play, and might have to be manually configured through jumpers or DIP switches.

Let-through — The maximum voltage allowed through a surge suppressor to the device being protected.

Level 1 cache — *See* Internal cache.

Level 2 cache — *See* External cache.

License — Permission for an individual to use a product or service. A manufacturer's method of maintaining ownership, while granting permission for use to others.

Limited token — Applies to a FDDI network. A token sent that allows a receiving station to communicate only with the sending station, thus providing continuous communication between the two stations.

Line conditioners — Devices that regulate, or condition the power, providing continuous voltage during brownouts and spikes.

Line protocol — A protocol used over phone lines to allow a connection to a network. Also called a bridging protocol. The most popular line protocol is PPP (Point-to-Point Protocol).

Line speed — *See* Modem speed.

Line-interactive UPS — A variation of a standby UPS that shortens switching time by always keeping the inverter that converts AC to DC working, so that there is no charge-up time for the inverter.

Load size — The largest amount of memory that a driver needs to initialize itself and to hold its data. It is almost always a little larger than the size of the program file.

Loading high — The process of loading a driver or TSR into upper memory.

Local bus — A bus that operates at a speed synchronized with the CPU speed.

Local I/O bus — A local bus that provides I/O devices with fast access to the CPU.

Logical block addressing (LBA) — A method in which the operating system views the drive as one long linear list of LBAs, permitting larger drive sizes (LBA 0 is cylinder 0, head 0, and sector 1).

Logical drive — A portion or all of a hard drive partition that is treated by the operating system as though it were a physical drive containing a boot record, FAT, and root directory.

Logical geometry — The number of heads, tracks, and sectors that the BIOS on the hard drive controller presents to the system BIOS and the OS. The logical geometry does not consist of the same values as the physical geometry, although calculations of drive capacity yield the same results.

Logical unit number (LUN) — A number from 0 to 15 (also called the SCSI ID) assigned to each SCSI device attached to a daisy chain.

Lossless compression — A method that substitutes special characters for repeating patterns without image degradation. A substitution table is used to restore the compressed image to its original form.

Lossy compression — A method that drops unnecessary data, but with some image and sound loss. JPEG allows the user to control the amount of loss, which is inversely related to the image size.

Lost allocation units — *See* Lost clusters.

Lost clusters — Lost file fragments that, according to the file allocation table, contain data that does not belong to any file. In DOS, the command CHKDSK/F can free these fragments.

Low insertion force (LIF) — A socket feature that requires the installer to manually apply an even force over the microchip when inserting the chip into the socket.

Low-level format — A process (usually performed at the factory) that electronically creates the hard drive cylinders and tests for bad spots on the disk surface.

MAC (media access control) — An element of data-link layer protocol that provides compatibility with the NIC used by the physical layer. A network card address is often called a MAC address. *See* Adapter address.

Macro — A small sequence of commands, contained within a document, that can be automatically executed when the document is loaded, or executed later by using a predetermined keystroke.

Macro virus — A virus that can hide in the macros of a document file. Typically, viruses do not reside in data or document files.

Main board — *See* System board.

Make code — A code produced by pressing a key on a computer keyboard. *See* Break code.

Master boot record (MBR) (of a floppy disk) — The record written near the beginning of a floppy disk, containing information about the disk as well as the startup operating system programs.

Master boot record (MBR) (on a hard drive) — The first sector on a hard drive, which contains the partition table and other information needed by BIOS to access the drive.

Material safety data sheet (MSDS) — A document that provides information about how to properly handle substances such as chemical solvents including physical data, toxicity, health effects, first aid, storage, disposal, and spill procedures.

MCA (micro channel architecture) bus — A proprietary IBM PS/2 bus, seldom seen today, with a width of 16 or 32 bits and multiple master control, which allowed for multitasking.

MD or MKDIR command — A command used to create a directory on a drive (for example, MD C:\MYDATA).

MEM command — A DOS utility used to display how programs and drivers are using conventional, upper, and extended memory (Example: MEM/C/P).

MemMaker — A DOS utility that can increase the amount of conventional memory available to DOS-based software applications, by loading drivers and TRSs into upper memory.

Memory — Physical microchips that can hold data and programming located on the system board or expansion cards.

Memory address — A number that the CPU assigns to physical memory to keep track of the memory that it has access to.

Memory bus — The bus between the CPU and memory on the system board. Also called the system bus or the host bus.

Memory cache — A small amount of faster RAM that stores recently retrieved data, in anticipation of what the CPU will request next, thus speeding up access.

Memory caching — Using a small amount of faster RAM to store recently retrieved data, in anticipation of what the CPU will next request, thus speeding up access.

Memory leak — A problem caused when an application does not release the memory addresses assigned to it when it unloads, causing the memory heaps to have less and less memory for new applications.

Memory management — The process of increasing available conventional memory, required by DOS-based programs, accomplished by loading device drivers and TSRs into upper memory.

Memory mapping — Assigning addresses to both RAM and ROM during the boot process.

Memory paging — In Windows 9x, swapping blocks of RAM memory to an area of the hard drive to serve as virtual memory when RAM memory is low.

Memory-resident virus — A virus that can stay lurking in memory, even after its host program is terminated.

Middleware — Software necessary for an application on a client to pass requests to a server, and for a server to respond with data. Microsoft's Open Database Connectivity (ODBC) is an example of middleware.

MIDI (Musical Instrument Digital Interface) — Pronounced "middy," a standard for transmitting sound from musical devices, such as electronic keyboards, to computers where it can be digitally stored.

Minicartridge — A tape drive cartridge that is only $3\frac{1}{4} \times 2\frac{1}{2} \times \frac{1}{8}$ inches. It is small enough to allow two drives to fit into a standard $5\frac{1}{4}$ -inch drive bay of a PC case.

- Minifile system** — In Windows NT, a simplified file system that is started so that Ntldr (NT Loader) can read files from either a FAT16 or an NTFS file system.
- MIRROR command** — An old DOS command that saves information about deleted files as they are deleted. This information can be used later by the UNDELETE command to recover a deleted file. The command can be used to save the partition table to a floppy disk.
- mixed mode** — A Windows 2000 mode for domain controllers used when there is at least one Windows NT domain controller on the network.
- MMX (Multimedia Extensions) technology** — A variation of the Pentium processor designed to manage and speed up high-volume input/output needed for graphics, motion video, animation, and sound.
- Modem** — From MOdulate/DEModulate. A device that modulates digital data from a computer to an analog format that can be sent over telephone lines, then demodulates it back into digital form.
- Modem eliminator** — A technique that allows two data terminal equipment (DTE) devices to communicate by means of a null modem cable in which the transmit and receive wires are cross-connected, and no modems are necessary.
- Modem riser card** — A small modem card that uses an AMR or CNR slot. Part of the modem logic is contained in a controller on the system board.
- Modem speed** — The speed a modem can transmit data along a phone line measured in bits per second (bps). Two communicating modems must talk at the same speed for data transmission to be successful. Also called line speed.
- Modulation** — Converting binary or digital data into an analog signal that can be sent over standard telephone lines.
- Monitor** — The most commonly used output device for displaying text and graphics on a computer.
- Motherboard** — See System board.
- Mouse** — A pointing and input device that allows the user to move a cursor around a screen and select programs with the click of a button.
- MP3** — A method to compress audio files that uses MPEG level 3. It can reduce sound files as low as a 1:24 ratio without losing sound quality.
- MPC (Multimedia Personal Computer) guidelines** — The minimum standards created by Microsoft and a consortium of hardware manufacturers for multimedia PCs.
- MPEG (Moving Pictures Experts Group)** — A processing-intensive standard for data compression for motion pictures that tracks movement from one frame to the next, and only stores the new data that has changed.
- MSDOS.SYS** — In DOS, a program file that contains part of the DOS kernel and controls much of the boot process. In Windows 9x, a text file that contains settings used by Io.sys during booting.
- Multibank DRAM (MDRAM)** — A special kind of RAM used on video cards that is able to use a full 128-bit bus path without requiring the full 4MB of RAM.
- Multiframe dialog** — When a limited token is sent that allows a receiving station to communicate only with the sending station, thus providing continuous communication between the two stations.
- Multimedia** — A type of computer presentation that combines text, graphics, animation, photos, sound, and/or full-motion video.
- Multimeter** — Either a voltmeter or an ammeter that can also measure resistance in ohms or as continuity, depending on a switch setting.
- Multipartite virus** — A combination of a boot sector virus and a file virus. It can hide in either type of program.
- Multiplier** — On a system board, the factor by which the bus speed or frequency is multiplied to get the CPU clock speed.
- Multiscan monitor** — A monitor that can work within a range of frequencies, and thus can work with different standards and video cards. It offers a variety of refresh rates.
- Multisession** — A feature that allows data to be read (or written) on a CD during more than one session. This is important if the disc was only partially filled during the first write.
- Multistation access unit (MSAU or MAU)** — A centralized device used to connect IBM Token Ring network stations.
- Multitasking** — When a CPU or an OS supporting multiple CPUs can do more than one thing at a time. The Pentium is a multitasking CPU.
- Multithreading** — The ability to pass more than one function (thread) to the OS kernel at the same time, such as when one thread is performing a print job while another reads a file.
- native mode** — A Windows 2000 mode used by domain controllers when there are no Windows NT domain controllers present on the network.
- Nearest active downstream neighbor (NADN)** — The next station to receive a token in a token ring.
- Nearest active upstream neighbor (NAUN)** — The station that has just sent a token to the nearest active downstream neighbor in a token ring.
- NetBEUI (NetBIOS Extended User Interface)** — A proprietary Microsoft networking protocol used only by Windows-based systems, and limited to LANs because it does not support routing.
- NetBT (NetBIOS over TCP/IP)** — An alternate Microsoft NetBEUI component designed to interface with TCP/IP networks.
- Network interface card (NIC)** — A network adapter board that plugs into a computer's system board and provides a port on the back of the card to connect a PC to a network.

- Network layer** — The OSI layer responsible for routing packets.
- Network mask** — The portion of an IP address that identifies the network.
- Node** — Each computer, workstation, or device on a network.
- Noise** — An extraneous, unwanted signal, often over an analog phone line, that can cause communication interference or transmission errors. Possible sources are fluorescent lighting, radios, TVs, lightning, or bad wiring.
- Non-interlace** — A type of display in which the electronic beam of a monitor draws every line on the screen with each pass. *See* Interlace.
- Non-memory-resident virus** — A virus that is terminated when the host program is closed. Compare to memory-resident virus.
- Nonparity memory** — Slightly less expensive, 8-bit memory without error checking. A SIMM part number with a 32 in it (4 2 8 bits) is nonparity.
- Nonvolatile** — Refers to a kind of RAM that is stable and can hold data as long as electricity is powering the memory.
- Normal mode** — *See* CHS.
- North bridge** — That portion of the chip set hub that connects faster I/O buses (e.g., AGP bus) to the system bus. Compare to South bridge.
- Notebook** — A personal computer designed for travel, using less voltage and taking up less space than a regular PC. Also called a laptop computer.
- NT Hardware Qualifier (NTHQ)** — A utility found on the Windows NT installation CD-ROM that examines your system to determine if all hardware present qualifies for NT.
- NT virtual DOS machine (NTVDM)** — An emulated environment in which a 16-bit DOS application or a Windows 3.x application resides within Windows NT with its own memory space or WOW (Win 16 application on a Win 32 platform). (*See* WOW.)
- Nldr (NT Loader)** — In Windows NT, the OS loader used on Intel systems.
- Null modem cable** — *See* Modem eliminator.
- Object linking** — A method where one application can execute a command on an object created by another application.
- Octet** — A traditional term for each of the four 8-bit numbers that make up an IP address. For example, the IP address 206.96.103.114 has four octets.
- Ohms** — The standard unit of measurement for electrical resistance. Resistors are rated in ohms.
- On-board BIOS** — *See* System BIOS.
- On-board ports** — Ports that are directly on the system board, such as a built-in keyboard port or on-board serial port.
- Open Systems Interconnect (OSI)** — A seven-layer (application, presentation, session, transport, network, data-link, physical) model of communications supported by a network. Refers to software and firmware only.
- Operating system format** — *See* High-level format.
- OS format** — *See* High-level format.
- Out-of-band signaling** — The type of signaling used by hardware flow control, which sends a message to pause transmission by using channels (or bands) not used for data.
- Overclocking** — Running a system board at a speed that is not recommended or guaranteed by CPU or chipset manufacturers.
- P-A-S-S** — An acronym to help remember how to use a fire extinguisher. (Pull the pin, Aim low at the base of the fire, Squeeze the handle of the extinguisher, and Sweep back and forth across the fire.)
- P1 connector** — Power connection on an ATX system board.
- Packets** — Network segments of data that also include header, destination addresses, and trailer information. Also called Frames.
- Page** — Memory allocated in 4K or 16K segments within a page frame.
- Page-in** — The process in which the memory manager goes to the hard drive to return the data from a swap file to RAM.
- Page-out** — The process in which, when RAM is full, the memory manager takes a page and moves it to the swap file.
- Page fault** — An OS interrupt that occurs when the OS is forced to access the hard drive to satisfy the demands for virtual memory.
- Page frame** — A 64K upper memory area divided into four equal-sized pages through which the memory manager swaps data.
- Parallel port** — A female port on the computer that can transmit data in parallel, 8 bits at a time, and is usually used with a printer. The names for parallel ports are LPT1 and LPT2.
- Parity** — An error-checking scheme in which a ninth, or “parity,” bit is added. The value of the parity bit is set to either 0 or 1 to provide an even number of ones for even parity and an odd number of ones for odd parity.
- Parity error** — An error that occurs when the number of 1s in the byte is not in agreement with the expected number.
- Parity memory** — Nine-bit memory in which the 9th bit is used for error checking. A SIMM part number with a 36 in it (4 2 9 bits) is parity. Older DOS PCs almost always use parity chips.
- Partition** — A division of a hard drive that can be used to hold logical drives.
- Partition table** — A table at the beginning of the hard drive that contains information about each partition on the drive. The partition table is contained in the master boot record.
- Passive network** — A network, such as Ethernet, in which the computers, not dedicated network devices, drive the signals over the network.

Path — The drive and list of directories pointing to a file.

PC Card — A credit-card-sized adapter card that can be slid into a slot in the side of many notebook computers and is used for connecting to modems, networks, and CD-ROM drives. Also called PCMCIA Card.

PC Card slot — An expansion slot on a notebook computer, into which a PC Card is inserted. Also called a PCMCIA Card slot.

PCI (peripheral component interconnect) bus — A bus common on Pentium computers that runs at speeds of up to 33 MHz, with a 32-bit-wide data path. It serves as the middle layer between the memory bus and expansion buses.

PCI bus IRQ steering — A feature that makes it possible for PCI devices to share an IRQ. System BIOS and the OS must both support this feature.

PCMCIA (Personal Computer Memory Card International Association) card — See PC Card.

PCMCIA Card slot — See PC Card slot.

Peripheral devices — Devices that communicate with the CPU, but are not located directly on the system board, such as the monitor, floppy drive, printer, and mouse.

Physical geometry — The actual layout of heads, tracks, and sectors on a hard drive. See Logical geometry.

Physical layer — The OSI layer responsible for interfacing with the network media (cabling).

PIF (program information file) — A file with a .pif file extension that is used by an OS to store the settings of the environment provided to a DOS application.

Pin grid array (PGA) — A feature of a CPU socket where the pins are aligned in uniform rows around the socket.

Pipelined burst SRAM — A less expensive SRAM that uses more clock cycles per transfer than nonpipelined burst, but does not significantly slow down the process.

Pit — Recessed areas on the surface of a CD or DVD, separating lands, or flat areas. Lands and pits are used to represent data on the disc.

Pixel — Small spots on a fine horizontal scan line that are illuminated to create an image on the monitor.

Plug and Play — A technology in which the operating system and BIOS are designed to automatically configure new hardware devices to eliminate system resource conflicts (such as IRQ and port conflicts).

Plug and Play BIOS — Basic input/output system for Plug and Play devices, which are designed to be automatically recognized by the computer when they are installed.

Polling — A process by which the CPU checks the status of connected devices to determine if they are ready to send or receive data.

Polymorphic virus — A type of virus that changes its distinguishing characteristics as it replicates itself. Mutating in this way makes it more difficult for AV software to recognize the presence of the virus.

Port — A physical connector, usually at the back of a computer, that allows a cable from a peripheral device, such as a printer, mouse, or modem, to be attached.

Port settings — The configuration parameters of communications devices such as COM1, COM2, or COM3, including IRQ settings.

Port speed — The communication speed between a DTE (computer) and a DCE (modem). As a general rule, the port speed should be at least four times as fast as the modem speed.

Portable Operating System Interface (POSIX) — A set of standards adopted to allow operating systems (such as UNIX and NT) and their applications to port from one platform to another.

POST (power-on self test) — A self-diagnostic program used to perform a simple test of the CPU, RAM, and various I/O devices. The POST is performed when the computer is first turned on and is stored in ROM-BIOS.

Power conditioners — Line conditioners that regulate, or condition, the power, providing continuous voltage during brownouts.

Power supply — A box inside the computer case that supplies power to the system board and other installed devices. Power supplies provide 3.3, 5, and 12 volts DC.

Power-on password — See Startup password.

PPP (Point-to-Point Protocol) — A common way PCs with modems can connect to an internet. The Windows Dial-Up Networking utility, found under My Computer, uses PPP.

Preemptive multitasking — A type of pseudomultitasking whereby the CPU allows an application a specified period of time and then preempts the processing to give time to another application.

Presentation layer — The OSI layer that compresses and decompresses data and interfaces with the Application layer and the Session layer.

Primary cache — See Internal cache.

Primary domain controller (PDC) — In a Windows NT network, the computer that controls the directory database of user accounts, group accounts, and computer accounts on a domain.

Primary storage — Temporary storage on the system board used by the CPU to process data and instructions.

Printer — A peripheral output device that produces printed output to paper. Different types include dot matrix, ink-jet, and laser printers.

Process — An executing instance of a program together with the program resources. There can be more than one process running for a program at the same time. One process for a program happens each time the program is loaded into memory or executed.

Processor speed — The speed or frequency at which the CPU operates. Usually expressed in MHz.

- Program** — A set of step-by-step instructions to a computer. Some are burned directly into chips, while others are stored as program files. Programs are written in languages such as BASIC and C++.
- Program file** — A file that contains instructions designed to be executed by the CPU.
- Program jump** — An instruction that causes control to be sent to a memory address other than the next sequential address.
- Program Information File (PIF)** — A file used by Windows to describe the environment for a DOS program to use.
- Proprietary** — A term for products that a company has exclusive rights to manufacture and/or market. Proprietary computer components are typically more difficult to find and more expensive to buy.
- Protected mode** — An operating mode that supports multi-tasking whereby the OS manages memory, programs have more than 1024K of memory addresses, and programs can use a 32-bit data path.
- Protocol** — A set of preestablished rules for communication. Examples of protocols are modem parity settings and the way in which header and trailer information in a data packet is formatted.
- PS/2 compatible mouse** — A mouse that uses a round mouse port (called a mini-DIN or PS/2 connector) coming directly off the system board.
- Pulse code modulation (PCM)** — A method of sampling sound in a reduced, digitized format, by recording differences between successive digital samples instead of their full values.
- Quarter-Inch Committee or quarter-inch cartridge (QIC)** — A name of a standardized method used to write data to tape. Backups made with the Windows 9x System Tools Backup utility have a .qic extension.
- RAID (redundant array of inexpensive disks or redundant array of independent disks)** — Several methods of configuring multiple hard drives to store data to increase logical volume size and improve performance, and to ensure that if one hard drive fails, the data is still available from another hard drive.
- RAM (random access memory)** — Temporary memory stored on chips, such as SIMMs, inside the computer. Information in RAM disappears when the computer's power is turned off.
- RAM drive** — A RAM area configured as a virtual hard drive, such as drive D, so that frequently used programs can be accessed faster. It is the opposite of virtual memory.
- RD or RMDIR command** — A DOS command to remove an unwanted directory (for example, RD C:\OLDDIR). You must delete all files in the directory to be removed, prior to using this command.
- Re-marked chips** — Chips that have been used and returned to the factory, marked again, and resold. The surface of the chips may be dull or scratched.
- Read/write head** — A sealed, magnetic coil device that moves across the surface of a disk either reading or writing data to the disk.
- Real mode** — A single-tasking operating mode whereby a program only has 1024K of memory addresses, has direct access to RAM, and uses a 16-bit data path.
- RECOVER command** — A command that recovers files that were lost because of a corrupted file allocation table.
- Recovery Console** — A Windows 2000 command-interface utility that can be used to solve problems when the OS cannot load from the hard drive.
- Rectifier** — An electrical device that converts AC to DC. A PC power supply contains a rectifier.
- Reduced write current** — A method whereby less current is used to write data to tracks near the center of the disk, where the bits are closer together.
- Refresh** — The process of periodically rewriting the data for instance, on dynamic RAM.
- Registry** — A database used by Windows to store hardware and software configuration information, user preferences, and setup information. Use Regedit.exe to edit the Registry.
- Removable drives** — High-capacity drives, such as Zip or Jaz drives, that have disks that can be removed like floppy disks.
- Repeater** — A device that amplifies weakened signals on a network.
- Request for Comment (RFC)** — A document presented to the technical community to propose and describe in detail a new standard to be adopted by the community at large. Search for and view RFCs at www.rfc-editor.org.
- Rescue disk** — A floppy disk that can be used to start up a computer when the hard drive fails to boot. *Also see* Emergency startup disk.
- Resistance** — The degree to which a device opposes or resists the flow of electricity. As the electrical resistance increases, the current decreases. *See* Ohms and Resistor.
- Resistor** — An electronic device that resists or opposes the flow of electricity. A resistor can be used to reduce the amount of electricity being supplied to an electronic component.
- Resolution** — The number of spots called pixels on a monitor screen that are addressable by software (example: 1024 × 768 pixels).
- Resource arbitrator** — A PnP component that decides which resources are assigned to which devices.
- Resource management** — The process of allocating resources to devices at startup.
- RET (resolution enhancement technology)** — The term used by Hewlett-Packard to describe the way a laser printer varies the size of the dots used to create an image. This technology partly accounts for the sharp, clear image created by a laser printer.

- Retension** — A tape maintenance procedure that fast-forwards and then rewinds the tape to eliminate loose spots on the tape.
- Reverse Address Resolution Protocol (RARP)** — Translates the unique hardware NIC addresses into IP addresses (the reverse of ARP).
- RISC (reduced instruction set computer) chips** — Chips that incorporate only the most frequently used instructions, so that the computer operates faster (for example, the PowerPC uses RISC chips).
- RJ-11** — A phone line connection found on a modem, telephone, and house phone outlet.
- RJ-45 connector** — A connector used on an Ethernet 10BaseT (twisted-pair cable) network. An RJ-45 port looks similar to a large phone jack.
- Roaming users** — Users who can move from PC to PC within a network, with their profiles following them.
- ROM (read-only memory)** — Chips that contain programming code and cannot be erased.
- ROM BIOS** — *See* BIOS.
- Root directory** — The main directory created when a hard drive or disk is first formatted.
- Route discovery** — When a router rebuilds its router tables on the basis of new information.
- Router** — A device or box that connects networks. A router transfers a packet to other networks when the packet is addressed to a station outside its network. The router can make intelligent decisions as to which network is the best route to use to send data to a distant network. *See* Bridge.
- Router table** — Tables of network addresses that also include the best possible routes (regarding tick count and hop count) to these networks. *See* Tick count and Hop count.
- Run-time configuration** — A PnP ongoing process that monitors changes in system devices, such as the removal of a PC Card on a notebook computer or the docking of a notebook computer to a docking station.
- Safe mode** — The mode in which Windows 9x is loaded with minimum configuration and drivers in order to allow the correction of system errors. To enter safe mode, press F5 or F8 when “Starting Windows 95/98” is displayed.
- SAM (security accounts manager)** — A portion of the Windows NT Registry that manages the account database that contains accounts, policies, and other pertinent information about the domain.
- Sample size** — Refers to samples taken when converting a signal from analog to digital. Sample size is a measure of the amount of storage allocated to a single measurement of a single sample. The larger the sample size, the more accurate the value and the larger the file sizes needed to store the data.
- Sampling** — Part of the process of converting sound or video from analog to digital format, whereby a sound wave or image is measured at uniform time intervals and saved as a series of smaller representative blocks. *See* Sampling rate.
- Sampling rate** — The rate of samples taken of an analog signal over a period of time, usually expressed as samples per second, or Hertz. For example, 44,100 Hz is the sampling rate used for 16-bit stereo.
- SCAM (SCSI configuration automatically)** — A method that follows the Plug and Play standard, to make installations of SCSI devices much easier, assuming that the device is SCAM-compatible.
- Scanning mirror** — A component of a laser printer. An octagonal mirror that can be directed in a sweeping motion to cover the entire length of a laser printer drum.
- SCSI (small computer system interface)** — A faster system-level interface with a host adapter and a bus that can daisy-chain as many as seven or 15 other devices.
- SCSI ID** — *See* Logical unit number.
- SCSI bus** — A bus standard used for peripheral devices tied together in a daisy chain.
- SCSI bus adapter chip** — The chip mounted on the logic board of a hard drive that allows the drive to be a part of a SCSI bus system.
- SC330 (Slot Connector 330)** — A 330-pin system board connector used to contain the Pentium III Xeon. Also called Slot 2.
- SECC (Single Edge Contact Cartridge)** — A type of cartridge that houses the Pentium III processor.
- Secondary storage** — Storage that is remote to the CPU and permanently holds data, even when the PC is turned off.
- Sector** — On a disk surface, one segment of a track, which almost always contains 512 bytes of data. Sometimes a single wedge of the disk surface is also called a sector.
- Segmentation** — To split a large Ethernet into smaller segments that are connected to each other by bridges or routers. This is done to prevent congestion as the number of nodes increases.
- Sequential access** — A method of data access used by tape drives whereby data is written or read sequentially from the beginning to the end of the tape or until the desired data is found.
- Serial mouse** — A mouse that uses a serial port and has a female 9-pin DB-9 connector.
- Serial ports** — Male ports on the computer used for transmitting data serially, one bit at a time. They are called COM1, COM2, COM3 and COM4.
- Server** — A microcomputer or minicomputer that stores programs and data to be used remotely by other computers.
- Session layer** — The OSI layer that makes and manages a connection between two nodes of the network.
- SGRAM (synchronous graphics RAM)** — Memory designed especially for video card processing that can synchronize itself with the CPU bus clock. They are commonly used for modems and mice, and in DOS are called COM1 or COM2.

- Shadow RAM or shadowing ROM** — The process of copying ROM programming code into RAM to speed up the system operation, because of the faster access speed of RAM.
- Signal-regenerating repeater** — A repeater that “reads” the signal on the network and then creates an exact duplicate of the signal, thus amplifying the signal without also amplifying unwanted noise that is mixed with the signal.
- SIMM (single inline memory module)** — A miniature circuit board used in a computer to hold RAM. SIMMs hold 8, 16, 32, or 64 MB on a single module.
- Single voltage CPU** — A CPU that requires one voltage for both internal and I/O operations.
- Single-instruction, multiple-data (SIMD)** — An MMX process that allows the CPU to execute a single instruction simultaneously on multiple pieces of data rather than by repetitive looping.
- Slack** — Wasted space on a hard drive caused by not using all available space at the end of clusters.
- Sleep mode** — A mode used in many “Green” systems that allows them to be configured through CMOS to suspend the monitor or even the drive, if the keyboard and/or CPU have been inactive for a set number of minutes. *See* Green standards.
- SLIP (Serial Line Internet Protocol)** — An early version of line protocol designed for home users connecting to the Internet. SLIP lacks reliable error checking and has mostly been replaced by PPP.
- SMARTDrive** — A hard drive cache program that comes with Windows 3.x and DOS that can be executed as a TSR from the AUTOEXEC.BAT file (for example, DEVICE=SMARTDRV.SYS 2048).
- SMTP (Simple Mail Transfer Protocol)** — A common protocol used to send e-mail across a network.
- Snap-in** — An administrative tool that is contained within a console. For example, Event Viewer is a snap-in in the Computer Management console.
- Socket** — A virtual connection from one computer to another such as that between a client and a server. Higher-level protocols such as HTTP use a socket to pass data between two computers. A socket is assigned a number for the current session, which is used by the high-level protocol.
- SO-DIMM (small outline DIMM)** — A small memory module designed for notebooks that has 72 pins and supports 32-bit data transfers.
- Soft boot** — To restart a PC by pressing three keys at the same time (Ctrl, Alt, and Del). Also called warm boot.
- Software** — Computer programs, or instructions to perform a specific task. Software may be BIOS, OSs, or applications software such as a word-processing or spreadsheet program.
- Software cache** — Cache controlled by software whereby the cache is stored in RAM.
- Software copyrights** — Copyright is a legal concept (covered by the Federal Copyright Act of 1976) that encompasses the protection of the rights of an originator of a creative work, which can include software. With the exception of archival backups, copyrighted programs are illegal to copy without specific authorization from the copyright holder.
- Software interrupt** — An event caused by a program currently being executed by the CPU signaling the CPU that it requires the use of a hardware device.
- Software piracy** — Making unauthorized copies of original copyrighted software.
- South bridge** — That portion of the chip set hub that connects slower I/O buses (e.g., ISA bus) to the system bus. Compare to North bridge.
- Spanned volumes** — Windows 2000 method of linking several volumes across multiple hard drives into a single logical drive.
- Spooling** — Placing print jobs in a print queue so that an application can be released from the printing process before printing is completed. Spooling is an acronym for simultaneous peripheral operations online.
- SSE (streaming SIMD extension)** — A technology used by the Intel Pentium III designed to improve performance of multimedia software.
- Staggered pin grid array (SPGA)** — A feature of a CPU socket where the pins are staggered over the socket in order to squeeze more pins into a small space.
- Standby time** — The time before a “Green” system will reduce 92% of its activity. *See* Green standards.
- Standby UPS** — A UPS that quickly switches from an AC power source to a battery-powered source during a brownout or power outage.
- Standoffs** — Small plastic or metal spacers placed on the bottom of the main system board, to raise it off the chassis, so that its components will not short out on the metal case.
- Star network architecture** — A network design in which nodes are connected at a centralized location.
- Star topology** — A network design in which nodes are connected at a centralized location.
- Start bit** — A bit that is used to signal the approach of data. *See* Stop bit.
- Startup BIOS** — Part of system BIOS that is responsible for controlling the PC when it is first turned on. Startup BIOS gives control over to the OS once it is loaded.
- Startup password** — A password that a computer requires during the boot process used to gain access to the PC. Also called power-on password.
- Static electricity** — *See* Electrostatic discharge.
- Static IP addresses** — IP addresses permanently assigned to a workstation. In Windows 9x, this can be done under Dial-Up Networking, Server Type, TCP/IP settings. Specify an IP address.
- Static RAM (SRAM)** — RAM chips that retain information without the need for refreshing, as long as the computer’s power is on. They are more expensive than traditional DRAM.

Static routing — When routing tables do not automatically change and must be manually edited. Windows NT and Windows 95 support only static routing. Compare to Dynamic routing.

Static VxD — A VxD that is loaded into memory at startup and remains there for the entire OS session.

Stealth virus — A virus that actively conceals itself by temporarily removing itself from an infected file that is about to be examined, and then hiding a copy of itself elsewhere on the drive.

Stop bit — A bit that is used to signal the end of a block of data.

Streaming audio — Downloading audio data from the Internet in a continuous stream of data without first downloading an entire audio file.

Subdirectory — In DOS, a directory that is contained within another directory. Also called a child directory.

Subnet mask — Defines which portion of the host address within an IP address is being borrowed to define separate subnets within a network. A 1 in the mask indicates that the bit is part of the network address, and a 0 indicates that the bit is part of the host address. For example, the subnet mask 255.255.192.0, in binary, is 11111111.11111111.11000000.00000000. Therefore, the network address is the first two octets and the subnet address is the first two bits of the third octet. The rest of the IP address refers to the host.

Subnetworks or subnets — Divisions of a large network, consisting of smaller separate networks (to prevent congestion). Each subnetwork is assigned a logical network IP name.

Subtree — One of five main keys that make up the Windows NT Registry. Examples are HKEY_CURRENT_USER and HKEY_LOCAL_MACHINE.

Suite — As applies to software, a collection of applications software sold as a bundle, whose components are designed to be compatible with one another. An example is Microsoft Office.

Surge suppressor or surge protector — A device or power strip designed to protect electronic equipment from power surges and spikes.

Suspend time — The time before a green system will reduce 99% of its activity. After this time, the system needs a warmup time so that the CPU, monitor, and hard drive can reach full activity.

Swap file — A file on the hard drive that is used by the OS for virtual memory.

Swapping — A method of freeing some memory by moving a “page” of data temporarily to a swap file on the hard drive; it can later be copied from disk back into memory.

Switch — A device that is used to break a large network into two smaller networks in order to reduce traffic congestion. A switch uses MAC addresses to determine which network to send a packet.

Synchronous DRAM (SDRAM) — A type of memory stored on DIMMs that run in sync with the system clock, running at the same speed as the system board. Currently, the fastest memory used on PCs.

Synchronous SRAM — SRAM that is faster and more expensive than asynchronous SRAM. It requires a clock signal to validate its control signals, enabling the cache to run in step with the CPU.

System BIOS — Basic input/output system chip(s) residing on the system board that control(s) normal I/O to such areas as system memory and floppy drives. Also called on-board BIOS.

System File Checker — System File Checker is part of the new Windows 2000 utility to protect system files, called Windows File Protection (WFP).

System State data — All files that Windows 2000 requires to load and perform successfully. The System State data is backed up using the Backup utility.

System board — The main board in the computer, also called the motherboard. The CPU, ROM chips, SIMMs, DIMMs, and interface cards are plugged into the system board.

System bus — Today the system bus usually means the memory bus. However, sometimes it is used to refer to other buses on the system board. *See* memory bus.

System clock — A line on a bus that is dedicated to timing the activities of components connected to it. The system clock provides a continuous pulse that other devices use to time themselves.

System disk — A floppy disk containing enough of an operating system to boot.

System partition — The active partition of the hard drive containing the boot record and the specific files required to load Windows NT.

System variable — A variable that has been given a name and a value; it is available to the operating system and applications software programs.

System-board mouse — A mouse that plugs into a round mouse port on the system board. Sometimes called a PS/2 mouse.

Task switching — *See* Cooperative multitasking.

TCP/IP (Transmission Control Protocol/Internet Protocol) — The suite of protocols developed to support the Internet. TCP is responsible for error checking, and IP is responsible for routing.

Technical documentation — The technical reference manuals, included with software packages and peripherals, that provide directions for installation, usage, and troubleshooting.

Telephony Application Programming Interface (TAPI) — A standard developed by Intel and Microsoft that can be used by 32-bit Windows 9x communications programs for communicating over phone lines.

- Telephony** — A term describing the technology of converting sound to signals that can travel over telephone lines.
- Temp directory** — A location to which inactive applications and data can be moved as a swap file, while Windows continues to process current active applications. (Avoid deleting Temp swap while Windows is running.)
- Temporary file** — A file that is created by Windows applications, to save temporary data, and may or may not be deleted when the application is unloaded.
- Terminating resistor** — The resistor added at the end of a SCSI chain to dampen the voltage at the end of the chain. *See* Termination.
- Termination** — A process necessary to prevent an echo effect of power at the end of a SCSI chain resulting in interference with the data transmission. *See* Terminating resistor.
- Thread** — A single task that is part of a larger task or program.
- Tick count** — The time required for a packet to reach its destination. One tick equals 1/18 of a second.
- Token** — A small frame on a Token Ring network that constantly travels around the ring in only one direction. When a station seizes the token, it controls the channel until its message is sent.
- Token ring** — A network that is logically a ring, but stations are connected to a centralized multistation access unit (MAU) in a star formation. Network communication is controlled by a token.
- Toner cavity** — A container filled with toner in a laser printer. The black resin toner is used to form the printed image on paper.
- Trace** — A wire on a circuit board that connects two components or devices together.
- Track** — The disk surface is divided into many concentric circles, each called a track.
- Trailer** — The part of a packet that follows the data and contains information used by some protocols for error checking.
- Training** — *See* Handshaking.
- Transceiver** — The bidirectional (transmitter and receiver) component on a NIC that is responsible for signal conversion and monitors for data collision.
- Transformer** — A device that changes the ratio of current to voltage. A computer power supply is basically a transformer and a rectifier.
- Transistor** — An electronic device that can regulate electricity and act as a logical gate or switch for an electrical signal.
- Translation** — A technique used by system BIOS and hard drive controller BIOS to break the 504 MB hard drive barrier, whereby a different set of drive parameters are communicated to the OS and other software than that used by the hard drive controller BIOS.
- Transport layer** — The OSI layer that verifies data and requests a resend when the data is corrupted.
- TREE command** — A DOS command that shows the disk directories in a graphical layout similar to a family tree (for example, TREE/F shows every filename in all branches of the tree).
- Trojan horse** — A type of infestation that hides or disguises itself as a useful program, yet is designed to cause damage at a later time.
- TSR (terminate-and-stay-resident)** — A program that is loaded into memory but is not immediately executed, such as a screen saver or a memory-resident antivirus program.
- Turbo mode** — A means of doubling the clock speed by pressing a button on the case of some older computers.
- UART (universal asynchronous receiver/transmitter) chip** — A chip that controls serial ports. It sets protocol and converts parallel data bits received from the system bus into serial bits.
- UPS (uninterruptible power supply)** — A device designed to provide a backup power supply during a power failure. Basically, a UPS is a battery backup system with an ultrafast sensing device.
- URL (Uniform Resource Locator)** — A unique address that identifies the domain name, path, or filename of a World Wide Web site. Microsoft's URL is:
<http://www.microsoft.com/>
- Unattended installation** — A Windows 2000 installation that is done by storing the answers to installation questions in a text file or script that Windows 2000 calls an answer file so that the answers do not have to be typed in during the installation.
- UNDELETE command** — A command that resets a deleted file's directory entry to normal, provided the clusters occupied by the file have not been overwritten and the file entry is still in the directory list.
- UNFORMAT command** — A DOS command that performs recovery from an accidental FORMAT, and may also repair a damaged partition table if the partition table was previously saved with MIRROR/PARTN.
- Universal serial bus (USB)** — A bus that is expected to eventually replace serial and parallel ports, designed to make installation and configuration of I/O devices easy, providing room for as many as 127 devices daisy-chained together. The USB uses only a single set of resources for all devices on the bus.
- Upper memory block (UMB)** — A group of consecutive memory addresses in RAM from 640K to 1 MB that can be used by device drivers and TSRs.
- Upper memory** — The memory addresses from 640K up to 1024K, originally reserved for BIOS, device drivers, and TSRs.
- upgrade installation** — A Windows 2000 installation that carries forward all previous operating system settings and applications installed under the previous operating system.

- URL (Uniform Resource Locator)** — A unique address that identifies the domain name, path, or filename of a World Wide Web site. Microsoft's URL address is: <http://www.microsoft.com/>
- User Datagram Protocol (UDP)** — A connectionless protocol that does not require a connection to send a packet and does not guarantee that the packet arrives at its destination. (A data packet was once called a datagram.)
- User account** — The information, stored in the SAM database, that defines a Windows NT user, including user name, password, memberships, and rights.
- User documentation** — Manuals, online documentation, instructions, and tutorials designed specifically for the user.
- User mode** — Provides an interface between an application and an OS, and only has access to hardware resources through the code running in kernel mode.
- User profile** — A personal profile about the user, kept in the Windows NT Registry, which enables the user's desktop settings and other operating parameters to be retained from one session to another.
- Utility software** — Software packages, such as Nuts & Bolts or Norton Utilities, that provide the means for data recovery and repair, virus detection, and the creation of backups.
- V.34 standard** — A communications standard that transmits at 28,800 bps and/or 33,600 bps.
- V.90** — A standard for data transmission over phone lines that can attain a speed of 56 Kbps. It replaces K56flex and x2 standards.
- Value data** — In Windows 9x, the name and value of a setting in the registry.
- VCACHE** — A built-in Windows 9x 32-bit software cache that doesn't take up conventional memory space or upper memory space, as SmartDrive does.
- Vector table** — See Interrupt vector table.
- VESA (Video Electronics Standards Association) VL bus** — A local bus used on 80486 computers for connecting 32-bit adapters directly to the local processor bus.
- Video card** — An interface card installed in the computer to control visual output on a monitor.
- Video controller card** — An interface card that controls the monitor. Also called video card or display adapter.
- Video driver** — A program that tells the computer how to effectively communicate with the video adapter card and monitor. It is often found on a floppy disk or CD that is shipped with the card.
- Video RAM or VRAM** — RAM on video cards that holds the data that is being passed from the computer to the monitor and can be accessed by two devices simultaneously. Higher resolutions often require more video memory.
- Virtual device driver (VDD) or VxD driver** — A 32-bit device driver running in protected mode.
- Virtual file allocation table (VFAT)** — A variation of the original DOS 16-bit FAT that allows for long filenames and 32-bit disk access.
- Virtual machines (VM)** — Multiple logical machines created within one physical machine by Windows, allowing applications to make serious errors within one logical machine without disturbing other programs and parts of the system.
- Virtual memory manager** — A Windows 9x program that controls the page table, swapping 4K pages in and out of physical RAM to and from the hard drive.
- Virtual memory** — A method whereby the OS uses the hard drive as though it were RAM.
- Virtual real mode** — An operating mode in which an OS provides an environment to a 16-bit program that acts like real mode.
- Virus** — A program that often has an incubation period, is infectious, and is intended to cause damage. A virus program might destroy data and programs or damage a disk drive's boot sector.
- Virus signature** — The distinguishing characteristics or patterns of a particular virus. Typically, AV signature updates for new viruses can be downloaded monthly from the Internet.
- Voice** — A group of samples for a musical instrument stored in a wavetable.
- Volatile** — Refers to a kind of RAM that is temporary, cannot hold data very long, and must be frequently refreshed.
- Volt** — A measure of electrical pressure differential. A computer ATX power supply usually provides five separate voltages: +12V, -12V, +5V, -5V, and +3V.
- Voltage** — Electrical differential that causes current to flow, measured in volts. See Volts.
- Voltmeter** — A device for measuring electrical voltage.
- Volumes** — In Windows 2000, a partition on a hard drive that is formatted as a dynamic drive.
- Wait state** — A clock tick in which nothing happens, used to ensure that the microprocessor isn't getting ahead of slower components. A 0-wait state is preferable to a 1-wait state. Too many wait states can slow a system down.
- Warm boot** — See Soft boot.
- Wattage** — Electrical power measured in watts.
- Watts** — The unit used to measure power. A typical computer may use a power supply that provides 200 watts.
- Wavetable** — A table of stored sample sounds used to synthesize sound by reconstructing the sound from digital data using actual samples of sounds from real instruments.
- Window RAM (WRAM)** — Dual-ported video RAM that is faster and less expensive than VRAM. It has its own internal bus on the chip, with a data path that is 256 bits wide.
- Windows Custom Setup** — A setup feature that allows user customization of such things as directory locations, wallpaper settings, font selections, and many other features.
- Windows Express Setup** — A setup feature that automatically installs Windows in the most commonly used fashion.

Windows File Protection (WFP) — A Windows 2000 feature that protects system files from being corrupted or erased by applications or users.

Windows Internet Naming Service (WINS) — A Microsoft resolution service with a distributed database that tracks relationships between domain names and IP addresses. Compare to DNS.

Windows NT Registry — A database containing all configuration information, including the user profile and hardware settings. The NT Registry is not compatible with the Windows 9x Registry.

Windows NT file system (NTFS) — A file system first introduced with Windows NT that provides improved security, disk storage, file compression, and long filenames.

Workgroup — In Windows NT, a logical group of computers and users in which administration, resources, and security are distributed throughout the network, without centralized management or security.

Worm — An infestation designed to copy itself repeatedly to memory, on drive space, or on a network until little memory or disk space remains.

WOW (Win 16 on Win 32) — A group of programs provided by Windows NT to create a virtual DOS environment that emulates a 16-bit Windows environment, protecting the rest of the NT OS from 16-bit applications.

Write precompensation — A method whereby data is written faster to the tracks that are near the center of a disk.

XCOPY command — A faster external DOS COPY program that can copy subdirectories (/S) (for example, XCOPY *.* A:/S).

Zero insertion force (ZIF) — A socket feature that uses a small lever to apply even force when installing the microchip into the socket.

Zone bit recording — A method of storing data on a hard drive whereby the drive can have more sectors per track near the outside of the platter.

